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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,984	01/18/2006	Nobuhiko Oohara	0092/019001	7136
22893	7590	08/24/2007		
SMITH PATENT OFFICE 1901 PENNSYLVANIA AVENUE N W SUITE 901 WASHINGTON, DC 20006			EXAMINER NWAONICHA, CHUKWUMA O	
			ART UNIT 1621	PAPER NUMBER
			MAIL DATE 08/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,984	<b>Applicant(s)</b> OOHARA ET AL.	
	<b>Examiner</b> Chukwuma O. Nwaonicha	<b>Art Unit</b> 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Current Status**

1. This action is responsive to Applicants' Appeal Brief filed on 7 June 2007.
2. Claims 1-7 are pending in the application.

**Claim Rejections - 35 USC § 102**

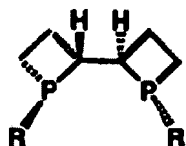
The rejection of claims 1-4 under 35 U.S.C. 102(b) as being anticipated by Imamoto et al., {Optically Active 1,1'-Di-tert-butyl-2,2'-diphosphetanyl and Its Application in Rhodium-Catalyzed Asymmetric Hydrogenations, Synthesis, 9, 2004, 1353-1358} and Zhang et al., {WO 2003042135 same as US 7,153,809} for the reasons set forth in the previous Office Action of 01/30/07 is maintained.

Applicants' arguments filed 7 June 2007 have been fully considered but they are not persuasive because Applicants claimed chiral ligand and its transition metal complex still reads on the disclosed chiral ligands and their transition metal complexes by Imamoto et al. and Zhang et al. See pages 1353 and 1354 of Optically Active 1,1'-Di-tert-butyl-2,2'-diphosphetanyl and Its Application in Rhodium-Catalyzed Asymmetric Hydrogenations, Synthesis, 9, 2004, 1353-1358 and columns 4, 7-12, 24-29 35 and 51-53 of US 7,153,809.

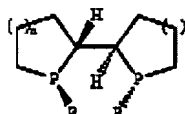
**Claim Rejections - 35 USC § 103**

The rejection under 35 U.S.C 103, as being obvious over Zhang et al., {WO 2003042135 same as US 7,153,809} set forth in claims 1 and 4 of the previous Office Action of 01/30/07 is maintained.

Applicants' arguments filed 7 June 2007 have been fully considered but they are not persuasive because applicants claim a chiral ligand of the general formula 1 and its transition metal complex reads on Zhang et al. teach chiral ligands of the general formula 2 and metal complexes based on such chiral ligands wherein n is 0 (formula 2), and all other variables are as defined in the prior art compound of Zhang et al. See columns 4, 7-12, 24-29 35 and 51-53 of US 7,153,809.



formula 1



formula 2

### ***New Rejections***

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

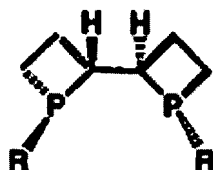
The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al., {WO 2003042135 same as US 7,153,809}.

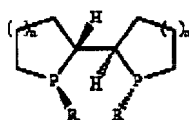
Applicants claim a chiral ligand of the general formula 1 and its transition metal complex; wherein all the variables are as defined in the claims.



formula 1

**Determination of the scope and content of the prior art (M.P.E.P. §2141.01)**

Zhang et al. teach chiral ligands of the general formula 2 and metal complexes based on such chiral ligands; wherein all the variables are as defined in the claims. The metal complexes are useful as catalysts in asymmetric reactions. See columns 4, 7-12, 24-29 35 and 51-53.



formula 2

**Ascertainment of the difference between the prior art and the claims (M.P.E.P. §2141.02)**

Zhang et al. chiral ligands and metal complexes differs from the instantly claimed chiral ligands and metal complexes in that the instantly claimed chiral ligands and metal complexes (formula 1) is a subgenus of Zhang et al. chiral ligands and metal complexes

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of the general formula 2. Specifically, applicants claim chiral ligands and metal complexes wherein n is 0, and all other variables are as defined in the prior art compound of Zhang et al.

**Finding of prima facie obviousness--rational and motivation (M.P.E.P. §2142-2143)**

The instantly claimed chiral ligands and metal complexes would have been suggested to one of ordinary skill because one of ordinary skill wishing to obtain chiral ligands and metal complexes for asymmetric reactions is taught to select the chiral ligands and metal complexes from the genus of Zhang et al.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the substituents of the genus of Zhang et al. to arrive at the instantly claimed chiral ligands and metal complexes. Said person would have been motivated to practice the teaching of the reference cited because it demonstrates that chiral ligands and metal complexes are useful in asymmetric reactions. The instantly claimed invention would therefore have been obvious to one of ordinary skill in the art.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Marinetti et al., {Synthesis and  $\alpha$ -Alkylation of 1-Menthylphosphetane Sulfide, Tetrahedron, Vol. 53, No. 12, pp. 4363-4370, 1997}.

Marinetti et al. disclose applicants claimed phosphetane compound. See pages 4364, 4365 and 4368.

Claims 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated Ohashi et al., {Improved Synthesis of 1-Adamantyl-Phosphine and its use in the Synthesis of Cyclicphosphines Containing 1-Adamantyl Group, Heterocycles Vol. 52, No. 2, 2000}.

Ohashi et al. disclose applicants claimed phosphetane compound. See page 906.

Claims 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated Imamoto et al., {Optically Active 1,1'-Di-tert-butyl-2,2'-diphosphetanyl and Its Application in Rhodium-Catalyzed Asymmetric Hydrogenations, Synthesis, 9, 2004, 1353-1358}

Imamoto et al. disclose applicants claimed phosphetane compound. See pages 1353 and 1354.

Claims 5-7 are rejected under 35 U.S.C. 102(a) as being anticipated Zhang et al., {WO 2003042135 same as US 7,153,809}.

Zhang et al. disclose applicants claimed phosphetane compound. See columns 4, 7-12, 24-29 35 and 51-53.

Applicants' amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne (Bonnie) Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.



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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Chukwuma O. Nwaonicha, Ph.D.

Patent Examiner

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